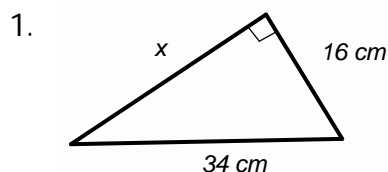
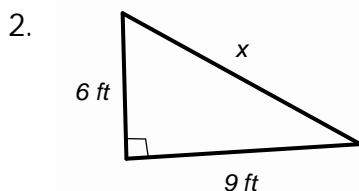


Target A

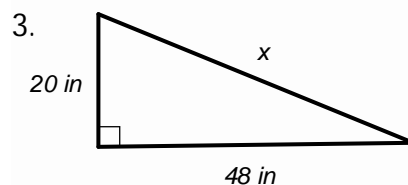
First ask yourself if you are finding the hypotenuse (the longest side, opposite the 90° angle) or a leg (the 2 sides touching the 90° angle), remember the Pythagorean Theorem states that $a^2 + b^2 = c^2$ and that a and b are the legs, while c is the hypotenuse. For the problems below, decide whether x is a leg or hypotenuse and if necessary, round your answers to the nearest tenth.



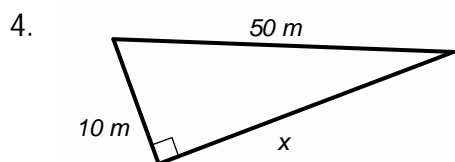
$x =$ _____



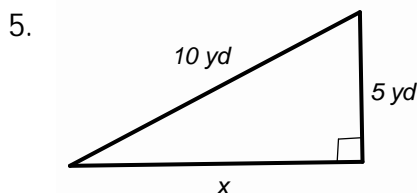
$x =$ _____



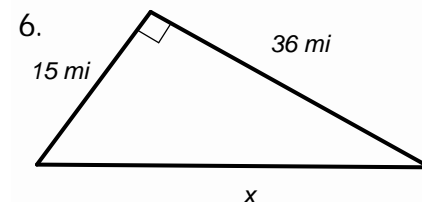
$x =$ _____



$x =$ _____



$x =$ _____



$x =$ _____

To classify a triangle according to its angles, find c^2 and $a^2 + b^2$. If:

$c^2 > a^2 + b^2$ the triangle is obtuse

$c^2 = a^2 + b^2$ the triangle is right

$c^2 < a^2 + b^2$ the triangle is acute

For each problem, classify the triangle according to its angles show an explanation.

7. 10.5, 36, 37.5 _____

8. 8, 21, 27 _____

9. 10, 8, 9 _____

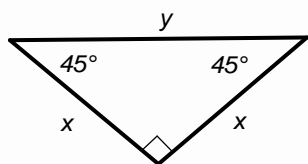
Target B

In a 45° - 45° - 90° triangle, the hypotenuse is $\sqrt{2}$ times the measure of the leg. Both legs are equal.

In a 30° - 60° - 90° triangle, the hypotenuse is 2 times the shortest side (opposite the 30° angle) and the longer side (opposite the 60° angle) is $\sqrt{3}$ times the shorter side.

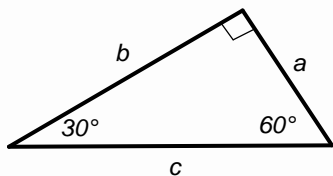
Complete the table for each triangle.

10.



x	5		$\sqrt{2}$	9	
y		$4\sqrt{2}$			24

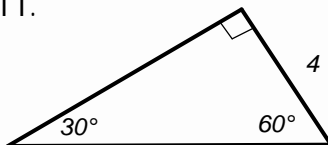
15.



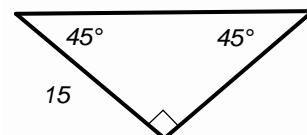
a	9			11	
b		9	$5\sqrt{3}$		
c					16

Label the sides with the exact value.

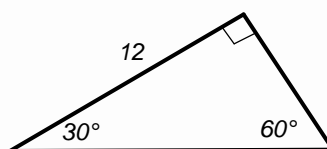
11.



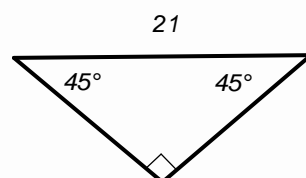
12.



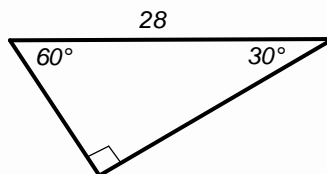
13.



14.

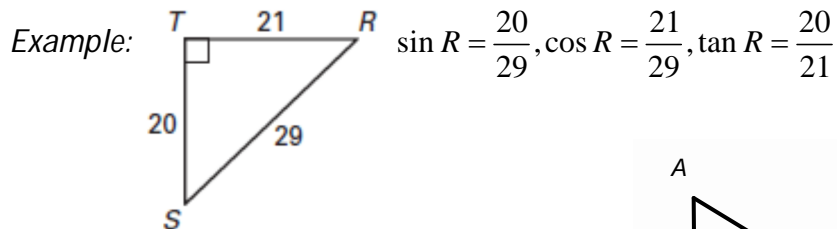


16.



Target C

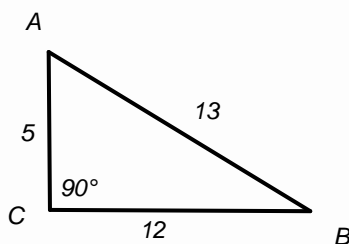
Use the ratios $\sin A = \frac{\text{opp}}{\text{hyp}}$, $\cos A = \frac{\text{adj}}{\text{hyp}}$, and $\tan A = \frac{\text{opp}}{\text{adj}}$ to write ratios in simplified form.



17. Find the ratios for $\sin A$, $\cos A$, and $\tan A$.

$\sin A = \underline{\hspace{2cm}}$ $\tan A = \underline{\hspace{2cm}}$

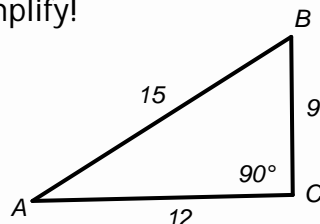
$\cos A = \underline{\hspace{2cm}}$



18. Find the ratios for sin A, cos A, and tan A. Don't forget to simplify!

sin A = _____ tan A = _____

cos A = _____



19. Use the same triangle to find the ratios for sin B, cos B and tan B. Remember to simplify!

sin B = _____ tan B = _____

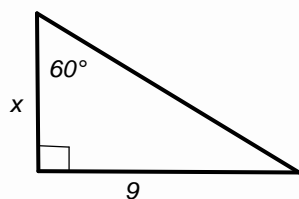
cos B = _____

Target D

Use the ratios $\sin A = \frac{\text{opp}}{\text{hyp}}$, $\cos A = \frac{\text{adj}}{\text{hyp}}$, and $\tan A = \frac{\text{opp}}{\text{adj}}$ to set up an equation to find a missing side.

Remember that A is the angle. If the variable is on top of the fraction, you will multiply. If the variable is on the bottom of the fraction, you will divide.

Example: Find the missing side.

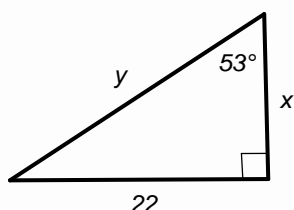


$$\tan 60^\circ = \frac{9}{x}$$

$$x = \frac{9}{\tan 60^\circ} = 5.2$$

Find the missing side. Write your equations. Round each answer to the nearest tenth.

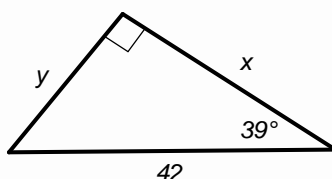
20.



x = _____

y = _____

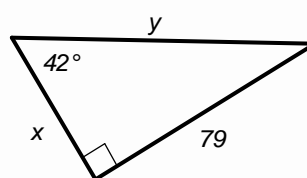
21.



x = _____

y = _____

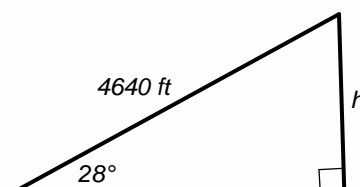
22.



x = _____

y = _____

23. A chair lift on a ski slope had an angle of elevation of 28° and covers a total distance of 4640 ft. To the nearest foot, what is the vertical height (h) of the chair lift?

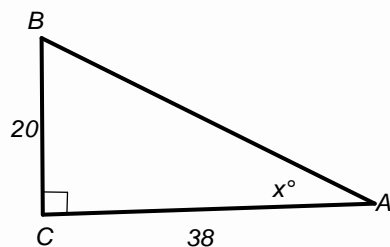


Target E

Use the ratios $\sin A = \frac{\text{opp}}{\text{hyp}}$, $\cos A = \frac{\text{adj}}{\text{hyp}}$, and $\tan A = \frac{\text{opp}}{\text{adj}}$ to set up an equation to find a missing angle.

Remember to use the 2nd ratio to find the angle.

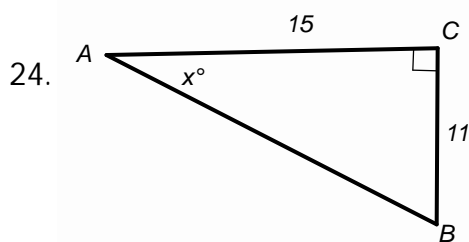
Example: Find the measure of angle A.



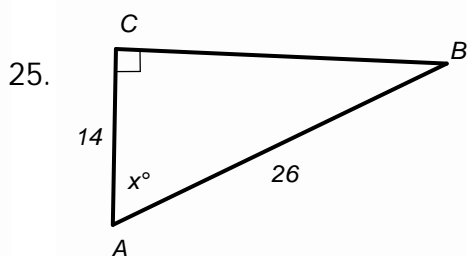
$$\tan x = \frac{20}{38}$$

$$\text{calculator: } 2^{\text{nd}} \tan \frac{20}{38} \text{ or } x = \tan^{-1} \left(\frac{20}{38} \right) = 27.8^\circ$$

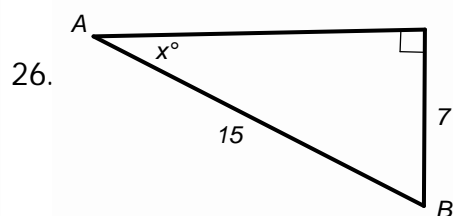
Find the measure of angle A. Write your equation. Round answers to the nearest tenth.



X = _____



X = _____



X = _____

27. You are standing 350 feet away from a skyscraper that is 750 feet tall. What is the angle of elevation (x°) from you to the top of the building?

